UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,500	06/24/2003	Prasad Miriyala	CISCP109C1/7872	3636

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EXAMINER
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.</td><td>Applicant(s)</td></tr>
<tr><td>10/603,500</td><td>MIRIYALA, PRASAD</td></tr>
<tr><td></td><td>Examiner</td><td>Art Unit</td></tr>
<tr><td></td><td>Anthony Sol</td><td>2619</td></tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>7/24/2007</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1,2 and 4-43</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1,2 and 4-43</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

- Applicant's Amendment filed 7/24/2007 is acknowledged.

- The previous objection to claim 29 is withdrawn.

- Claims 1, 4, 15, 19, 20, 23, 24, 29, 33, and 42 have been amended.

- Claim 3 has been canceled.

- Claims 1-2 and 4-42 are pending.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1, 2, 4, 6-16, 18-24, 26-38 and 40-42 are rejected under 35 U.S.C. 102(e)

as being anticipated by U.S. Patent No. 6,665,304 B2 ("Beck").

Regarding claims 1, 20, 24, 33, and 42,

Beck shows in fig. 7 a standby group of ATM network devices (*processor nodes*

10a, 10b, 10c) within an ATM network (col. 10, lines 64-67, *high-speed*

communications interface, e.g. ATM), each ATM network device within the standby

group having its own ATM address (*S1.A, S1.B, S1.C*) and sharing a non-ATM network

address with other members of the standby group (col. 11, lines 17-22, 40-45, *cluster alias address*).

Beck further shows in fig. 7 a server (*network router 25*) which is configured to determine that a first member (*processor node A 10a*) of the standby group of network devices is not available to provide the network service and identify a second member (*processor node B 10b*) of the standby group of network devices to provide the network service, wherein the determination by the server is performed based on at least one of i) detecting that the first member has not opened a virtual circuit within a predetermined period, and detecting that the first member has not sent a KEEP ALIVE message within a predetermined period (col. 12, lines 14 to col. 13, line 63, see in particular col. 13, lines 9-11, *For illustration purposes, consider that processor node 10a is the preferred path to subnet S1. When processor node 10a crashes, the network router will stop getting responses to its queries. After a predetermined period of time has expired, the routing daemon 21 will timeout while waiting for a response from processor node 10a*), and wherein the server is an ATM server in the ATM network (col. 10, lines 64-67, *high-speed communications interface, e.g. ATM;* col. 12, lines 51-60, *Network 22 **includes** network router devices, e.g., **network router 25***).

3.   Regarding claim 2,

Beck discloses that of the three processor nodes 10a-10c, the network router 25 typically selects one to use as a preferred path to subnet S1 (col. 13, lines 3-5).

4.   Regarding claims 4 and 27,

Beck shows in fig. 2 processor nodes 10a-10c in a "subnet S1" 22 having a

virtual connection to network router 25 (col. 4, lines 21-28, col. 11, lines 30-45, col. 12,

lines 50-65).

5.   Regarding claims 6 and 7,

Beck shows in fig. 7 a virtual subnet S3, wherein each processor node

associated with a virtual subnet "advertise" the location of that virtual subnet to router

25. Beck discloses that each processor node 10 in the cluster 24 uses IP routing to

advertise itself as a network route to the associated virtual subnet (col. 11, lines 30-39).

6.   Regarding claim 8,

Beck discloses when processor node 10a crashes, the network router will stop

getting responses to its queries (col. 13, lines 9-11).

7.   Regarding claim 9,

Beck discloses that each network router maintains a map database that indicates

available network paths over which data packets can be sent to reach particular

processor nodes (col. 12, lines 54-57).

8.   Regarding claims 10, 11, 12, 13, 16 and 22,

Beck discloses that processor nodes 10b and 10c arbitrate among themselves to

determine which one will acquire the network layer address of processor node 10a (col. 13, lines 43-45).

9.   Regarding claim 14,

Beck discloses the use of ARP protocol and how daemon processes 21 queries the processor nodes and network routers to which it is connected to find out which processor nodes and network routers they are connected to. Beck further discloses that if processor node 10a crashes, processor nodes 10b and 10c arbitrate to determine which one will acquire the network layer address of processor node 10a. Beck further discloses that accordingly, the routing daemon 21 puts together a table of routes from the router to each processor node (col. 11, line 49 to col. 13, line 59).

10.   Regarding claim 15,

Beck shows in fig. 7 a standby group of ATM network devices (*processor nodes 10a, 10b, 10c*) within an ATM network (col. 10, lines 64-67, *high-speed communications interface, e.g. ATM*), each ATM network device within the standby group having its own ATM address (*S1.A, S1.B, S1.C*) and sharing a non-ATM network address with other members of the standby group (col. 11, lines 17-22, 40-45, *cluster alias address*).

Beck further shows in fig. 7 a server (*network router 25*) which is configured to determine that the first network device (processor node 10b) is available by at least one of (i) detecting that the first network device has opened a virtual circuit within a

predetermined period, and (ii) detecting that the first network device has sent a KEEP

ALIVE message within a predetermined period (col. 12, lines 14 to col. 13, line 63, see

in particular col. 12, line 67 to col. 13, line 3, *A routing daemon 21 that queries*

processing nodes 10a-10c generates a map indicating that each of those processor

nodes can be used as paths to subnet S1).

Beck discloses that the server is configured to send a notification identifying the

first network device by ATM address (*S1.B*) and the shared non-ATM network address

(*cluster alias address associated with a virtual subnet S3*) and receive one or more

packets destined for the shared non-ATM network address (col. 12, lines 14-34).

11.   Regarding claim 18,

Beck discloses that the cluster management application sends a message to the

other processor nodes within the cluster when one of those processor nodes crashes.

Beck further discloses that nodes 10b and 10c arbitrate among themselves to determine

whine one will acquire the network layer address of processor node 10a (col. 13, lines

38-45).

12.   Regarding claim 19,

Beck discloses cluster alias address associated with virtual subnet S3. Beck

discloses that the route to the virtual subnet address are advertised using common IP

routing protocol (col. 12, lines 14-22).

13.   Regarding claims 21, 34, 35, 36, 37, 38,

Beck discloses that one or **more** cluster alias addresses may be "configured" in a

virtual or physical subnet (col. 11, lines 40-45).

14.   Regarding claim 23,

Beck shows in fig. 7 a network device (*processor node 10a*) in the ATM network

(col. 10, lines 64-67, *high-speed communications interface, e.g. ATM*), the network

device having at least one non-ATM network address (col. 11, lines 17-22, 40-45,

cluster alias address).

Beck further shows in fig. 7 a server (*network router 25*) which is configured to

assign the network device to a group of network devices having a shared non-ATM

network address (col. 11, lines 17-22, 40-45, *cluster alias address)* and to determine

whether the network device is not available by at least one of (i) determining whether

the network device has not opened a virtual circuit within a predetermined period, and

(ii) determining whether the network device has not sent a KEEP ALIVE message within

a predetermined period (col. 12, lines 14 to col. 13, line 63, see in particular col. 13,

lines 9-11, *For illustration purposes, consider that processor node 10a is the preferred*

path to subnet S1. When processor node 10a crashes, the network router will stop

getting responses to its queries. After a predetermined period of time has expired, the

routing daemon 21 will timeout while waiting for a response from processor node 10a).

Beck discloses that if the network device is not available, change the

network device from an active status in which the network device services the

non-ATM network address to a standby status in which the network device does

not service the non-ATM network address (col. 13, lines 55-59, *After the routing*

failover period has expired, the routers will not send data packets to processor node

10a).

15.   Regarding claim 26,

        Beck discloses high-speed communications interface, e.g. ATM (col. 10, lines 64-

67).

16.   Regarding claim 28,

        Beck discloses cluster alias address (col. 11, lines 17-22, 40-45).

17.   Regarding claims 29 and 32,

        Beck discloses use of a bitmask, referred to as "subnet mask," that is "ANDed"

with the identified destination address, e.g. the cluster alias address (col. 11, lines 14-

19).

18.   Regarding claim 30,

        Beck discloses a map database (col. 12, lines 51-65).

19.   Regarding claim 31,

        Beck discloses a table of routes (col. lines 51-65).

20.   Regarding claim 40,

Beck shows in fig. 7, a network router 25.

21.   Regarding claim 41,

Beck shows in fig. 7, a Subnet S2 with ATM addresses S2.B and S2.C.

22.   Regarding claim 43,

Beck shows in fig. 7, that each of the processing nodes 10a, 10b, and 10c, can

be used as paths to Subnet S1, which is a physical connection (claimed bridge; col. 13,

lines 2-3).

Claim Rejections - 35 USC § 103

23.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains. .
Patentability shall not be negatived by the manner in which the invention was made.

24.   Claims 5, 17, 25 and 39 are rejected under 35 U.S.C. 103(a) as being

unpatentable

over Beck in view of RFC 2225 Classical IP and ARP over ATM ("RFC 2225").

Regarding claims 5, 17, 25 and 39,

Beck does not disclose that the server is configured to send an ATMARP request to form the virtual connections .

RFC 2225 discloses in an SVC environment, ATMARP servers are used to resolve target IP addresses to target ATM address via an ATMARP request and reply protocol and that ATMARP servers must have authoritative responsibility for resolving ATMARP requests of all IP members using SVCs located within the LIS (Section 5.2).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to modify the method for providing an integrated cluster alias address of Beck to use an ATMARP request as taught by RFC 2225. One skilled in the art would have been motivated to make the combination for the purpose of resolving target IP addresses to target ATM address (RFC 2225, Section 5.2).

Response to Arguments

25.   Applicant's arguments filed 7/24/2007 have been fully considered but they are not persuasive.

-        The Applicant argues on page 9 of the Remarks that nothing in Beck patent suggests that router 25, which is outside of the cluster 24 and which the Action treats as the claimed server, is an ATM server.

-        The Examiner respectfully disagrees. Beck discloses that network 22 of fig. 7 can be an ATM network by the virtue of an ATM interface (col. 10, lines 63-67). Beck further discloses that

> **network 22 includes network router 25** (col. 12, lines 51-60),
>
> thus network router 25 is in the ATM network; therefore, network
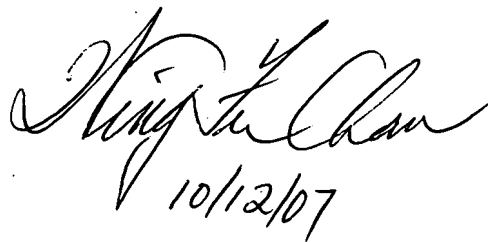>
> router 25 is an ATM server.

Conclusion

26.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Anthony Sol whose telephone number is (571) 272-

5949. The examiner can normally be reached on M-F 7:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

10/12/07

WING CHAN
SUPERVISORY PATENT EXAMINER

AMS

10/9/2007